

## Claims

1. A method for dynamically altering a portion of a digital video image based upon a user profile, the method comprising the steps of:

5 receiving a digital video image;

retrieving a first profile associated with a first user, the first profile including information pertaining to a desired characteristic relating to the first user;

10 and

digitally altering a portion of the digital video image with a replacement digital image based upon the desired characteristic to produce a dynamically altered video image.

2. A method for dynamically altering a portion of a digital video image in accordance with claim 1, the method further comprising the step of transmitting the altered video image.

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3. A method for dynamically altering a portion of a digital video image in accordance with claim 1, wherein the first profile comprises information pertaining to a user receiving the altered video image.

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4. A method for dynamically altering a portion of a digital video image in accordance with claim 1, wherein the first profile comprises demographic information.

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5. A method for dynamically altering a portion of a digital video image in accordance with claim 1, wherein the first profile comprises time of day information.

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6. A method for dynamically altering a portion of a digital video image in accordance with claim 1, wherein the first profile comprises advertising information.

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7. A method for dynamically altering a portion of a digital video image in accordance with claim 1, wherein the first profile comprises geographic information.

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8. A method for dynamically altering a portion of a digital video image in accordance with claim 1, wherein the first profile comprises parental consent information.

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9. A method for dynamically altering a image, the method comprising the steps  
marking an original element in a d image, the original element comprising digital video image;  
retrieving a first profile associa user, the first profile including infor to a desired characteristic relating to choosing a replacement image based upon the first profile; and  
altering the digital video image b original element with the replacement i dynamically altered video image.

image, the original element comprising a portion of the digital video image;

choosing a replacement image based at least in part upon the first profile; and

altering the digital video image by replacing the original element with the replacement image to produce a dynamically altered video image.

A' could

10. A method for dynamically altering a digital video image in accordance with claim 9, wherein the step of choosing a replacement image comprises choosing a replacement image based upon the first profile.

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11. A method for dynamically altering a digital video image in accordance with claim 9, wherein the step of choosing a replacement image comprises choosing a replacement image based upon demographic information.

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12. A method for dynamically altering a digital video image in accordance with claim 9, wherein the step of choosing a replacement image comprises choosing a replacement image based upon the time of day.

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13. A method for dynamically altering a digital video image in accordance with claim 9, wherein the step of choosing a replacement image comprises choosing a replacement image based upon a parental rating code.

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14. A method for dynamically altering a digital video image in accordance with claim 9, wherein the step of choosing a replacement image comprises choosing a replacement image based upon advertising information.

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15. A method for dynamically altering a digital video image in accordance with claim 9, wherein the step of choosing a replacement image comprises choosing a replacement image based upon geographic information.

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16. A method for providing targeted product placement in a digital video stream, the method comprising the steps of:

receiving a digital video stream that includes an  
5 original element, the original element comprising a  
portion of the digital video stream;

determining, based at least in part upon a first profile associated with a first user, a replacement image that should be inserted into the digital video stream;

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10      retrieving the/replacement image;

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replacing the original element with the replacement image to form a modified video stream; and

transmitting the modified video stream over a broadband network.

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21. A method for providing targeted product placement in a video stream in accordance with claim 16, wherein the step of determining a replacement image that should be inserted comprises the step of determining the product image that should be inserted based at least in part upon parental consent information.

22. A method for providing targeted product placement in a video stream in accordance with claim 16, wherein the original element is defined by fiducials.

23. A method for providing targeted product placement in a video stream in accordance with claim 22, wherein the fiducials are gray hemispheres located in the digital video stream.

24. A service node for processing a digital video stream, the service node comprising:

an input port effective in receiving a digital video stream including an original element;

5 a control port for accessing a customer database and an image database;

*A1 cont'd*  
10 a video processor including a digital signal processor (DSP), memory, and a control processor, the control processor being effective in determining the product images to be inserted based at least in part upon a customer profile retrieved from the customer database, the control processor also effective in retrieving replacement images from the image database, the DSP effective in calculating transforms and selectively  
15 overwriting the original element, the DSP also effective in storing the replacement images in the memory, the DSP being effective in replacing the original elements with the replacement images to form a modified video stream; and

20 an output port effective in transmitting the modified video stream.



25. A service node for processing a digital video stream in accordance with claim 24, wherein the memory is a frame buffer.

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26. A service node for processing a digital video stream in accordance with claim 24, further comprising a main processor effective in controlling the operation of the video processor.

27. A service node for processing a digital video stream in accordance with claim 24, wherein the customer database comprises demographic information.

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28. A service node for processing a digital video stream in accordance with claim 24, wherein the customer database comprises time of day information.

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29. A service node for processing a digital video stream in accordance with claim 24, wherein the customer database comprises advertising information.

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30. A service node for processing a digital video stream in accordance with claim 24, wherein the customer database comprises geographic information.

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31. A service node for processing a digital video stream in accordance with claim 24, wherein the customer database comprises parental consent information.

*As  
cont'd*

32. A broadband network for processing video streams,  
the broadband network comprising:

a multicast router effective in receiving a digital  
video stream;

5 a service node comprising:

an input port effective in receiving the  
digital video stream;

a control port for accessing a customer  
database and an image database;

*A' cont'd*  
10 a video processor including a digital signal  
processor, memory, and a control processor, the  
control processor being effective in determining  
the product images to be inserted based at least  
in part upon a customer profile retrieved from  
15 the customer database, the control processor  
effective in retrieving replacement images from  
the image database and storing the replacement  
images in the memory, the digital signal  
processor being effective in replacing the  
20 original elements with the replacement images to  
form a modified video stream; and

an output port effective in transmitting the  
modified video stream over a broadband network;  
and

25 a broadband access network effective in transporting  
the altered video stream.

33. A broadband network for processing video streams in accordance with claim 32, wherein the memory is a frame buffer.

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34. A broadband network for processing video streams in accordance with claim 32, further comprising a main processor effective in controlling the operation of the video processor.

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35. A broadband network for processing video streams in accordance with claim 32, wherein the customer database comprises demographic information.

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36. A broadband network for processing video streams in accordance with claim 32, wherein the customer database comprises time of day information.

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37. A broadband network for processing video streams in accordance with claim 32, wherein the customer database comprises advertising information.

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38. A broadband network for processing video streams in accordance with claim 32, wherein the customer database comprises geographic information.

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39. A broadband network for processing video streams in accordance with claim 32, wherein the customer database comprises parental consent information.

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contd

40. A subscriber terminal for receiving a digital video stream, the subscriber terminal comprising:

a port for receiving a digital video stream and subscriber data, the subscriber data including replacement images based at least in part upon a customer profile; and

a video processor comprising:

an input port effective in receiving a digital video stream;

a video processor including a digital signal processor, and memory, the digital signal processor being effective in replacing the original elements with the replacement images to form a modified video signal; and

an output port effective in transmitting the modified video signal.

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47. A subscriber terminal for receiving a digital video stream in accordance with claim 40, wherein the customer database comprises parental consent information.

48. A method for providing a user-tailored video service to a subscriber, the method comprising:

obtaining user information pertaining to a plurality of users;

5 storing the user information for each of the  
plurality of users in a customer database;

receiving a video stream, the video stream including  
an original element comprising a portion of the video  
stream;

10        retrieving user information associated with a first  
user, the user information including information  
pertaining to a desired characteristic relating to the  
first user;

determining a replacement image to be inserted into  
15 the video stream based at least in part upon the user  
information;

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retrieving the/replacement image;
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replacing the original element with the replacement image to form a modified video stream; and

20 transporting to modified video stream to the first  
user over a broadband network.